

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/000962

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ C07C221/00, 225/10, 231/18, 233/76, 245/18, 271/18,
C07D307/58, C07F9/6571, 9/6578, 9/6584, C07B53/00, 61/00,
B01J31/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ C07C221/00, 225/10, 231/18, 233/76, 245/18, 269/01, 271/18,
C07D307/58, C07F9/6571, 9/6578, 9/6584, C07B53/00, 61/00,
B01J31/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CA (STN), REGISTRY (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	Daisuke Uraguchi, Masahiro Terada, "Chiral Broensted Acid-Catalyzed Direct Mannich Reactions via Electrophilic Activation", Journal of the American Chemical Society, 2004, Vol.126, No.17, pages 5356 to 5357	1-7, 15
X, P	Daisuke Uraguchi, Keiichi Sorimachi, Masahiro Terada, "Organocatalytic Asymmetric Aza-Friedel-Crafts Alkylation of Furan", Journal of the American Chemical Society, 2004, Vol.126, No.38, pages 11804 to 11805	1-7, 15-17
X	WO 2003/093259 A1 (AVENTIS PHARMA), 13 November, 2003 (13.11.03), A1; Full text & US 2004/0030145 A & EP 1504002 A1	1-7, 15

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search
04 April, 2005 (04.04.05)

Date of mailing of the international search report
26 April, 2005 (26.04.05)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

There is no technical feature common to all of claims 1 to 22.

Further, optically active binaphthol phosphates useful in asymmetric synthesis are publicly known (JP 2000-336097 A, JP 2002-249495 A), so that the technical feature common to claims 1-17 and 20-22, i.e., "P-OH" is not considered to be a special technical feature (that defines a contribution which each of the claimed inventions, considered as a whole, makes over the prior art).

Thus, there is no technical relationship among the inventions of claims 1-22 involving a special technical feature, so that the requirement of unity (continued to extra sheet)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-7, 15-17

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No. III of continuation of first sheet (2)

of invention is not satisfied.

(Concerning the scope of international search on claims 1-7 and 15-17)

To begin with, what technical fields amines produced by the processes set forth in claim 1 and so on are utilized in and what the amines are specifically applied to are unclear even in view of the disclosure of the description.

Thus, the claims do not satisfy the requirement provided for in PCT Article 5 (The specialist in technical field is unclear and which the specialist can use or not is also unclear). Further, the claims are (technically) inadequately supported by the description.

Although international search report need not be established, international search has been made on prior art related to the novelty of "processes for the production of amines as disclosed in Examples of the description".

Since the technical field of claim 1 and so on and the specialist of the field can not be supposed, no international search has been made on prior art related to the inventive step of claim 1 and so on.